

CLAIM OR CLAIMS

WHAT IS CLAIMED IS:

1. An instrumentation receiver of the type that converts a wideband RF signal  
5 to a wideband IF signal comprising:
  - a wideband IF channel having the wideband IF signal as an input to provide wideband signal acquisition data; and
  - a narrowband IF channel having the wideband IF signal as an input simultaneously with the wideband IF channel to provide high dynamic range  
10 signal data for a frequency trigger function.
2. The receiver as recited in claim 1 wherein the narrowband IF channel comprises:
  - a conversion stage having the wideband IF signal as an input to  
15 provide a frequency offset to the wideband IF signal;
  - means for narrowband filtering the frequency offset wideband IF signal to produce a narrowband IF signal; and
  - means for sampling the narrowband IF signal at a relatively slow sample rate with a high resolution to provide the high dynamic range signal  
20 data.
3. The receiver as recited in claims 1 or 2 wherein the wideband IF channel comprises means for sampling the wideband IF signal at a high sample rate with a relatively low resolution to provide the wideband signal acquisition.

4. The receiver as recited in claim 3 wherein the wideband IF channel further comprises an anti-aliasing filter having the wideband IF signal as an input and providing an anti-aliased wideband IF signal as input to the sampling means.

- 5 5. A method of processing a wideband signal to provide high dynamic range sampled data for use in a frequency trigger function comprising the steps of:
- inputting the wideband signal to both a narrowband channel and a wideband channel simultaneously;
  - sampling the wideband signal output from the wideband channel at a high sample rate with a relatively low resolution to provide wideband signal acquisition data;
  - varying a frequency offset in the narrowband channel to cover a desired subsection of the wideband signal;
  - narrowband filtering the frequency offset wideband signal to provide a narrowband signal from the wideband signal; and
  - sampling the narrowband signal output from the narrowband channel at a relatively low sample rate with a high resolution to provide the high dynamic range sampled data.